Installation and Operating Guide | Warranty

Model Number | VCM321 **| Video Cassette Recorder**

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zenith

Safety Precautions

WARNING: TO REDUCE THE RISK
OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE
PERSONNEL.

This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

NOTE TO CABLE/TV INSTALLER: This reminder is provided to call the cable TV system installer's attention to Article 820-40 of the National Electric Code (U.S.A.). The code provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of the cable entry as practical.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.
ATTENTION: POUR ÉVITER LES CHOC ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

WARNING: Do not drop the power cord tying band into the unit. Doing so might cause a fire or an electrical shock. (See page 10.)

SERIAL NUMBER: The serial number is found on the back of this unit. The number is unique to this unit only. You should write the serial number below and retain this guide as a permanent record of your purchase.
Model No. VCM321_____
Serial No. _____

REGULATORY INFORMATION:
FCC Part 15
This product has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a residential installation. This product generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the product off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the product and receiver.
- Connect the product into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC WARNING: This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

FCC COMPLIANCE: The responsible party for this product's compliance is:
Zenith Electronics Corporation, 2000 Millbrook Drive, Lincolnshire, IL 60069, USA
Phone: 1-847-941-8000.

MOISTURE CONDENSATION
If you pour a cold liquid into a glass, water vapor in the air will condense on the surface of the glass. This is moisture condensation. Moisture condensation on the head drum, one of the most crucial parts of the unit, will cause damage to the tape. When the VCR is exposed to a rapid temperature change from cold to warm, some condensation will occur. Under this condition, connect the power cord to a standard AC power outlet, press **POWER** to turn the VCR on and allow at least two hours for the VCR to dry out.

IMPORTANT COPYRIGHT INFORMATION: Many television programs and films are copyrighted. In certain circumstances copyright law may apply to private in-home video taping of copyrighted materials.

FEATURES

- **Auto Clock Set System**
- **Energy Save Function**
- **Easy Operations**
- **1 Year/8 Event Timer with DAILY and WEEKLY Functions**
- **Auto Power and Playback Functions**
- **Instant Timer Recording**
- **Real-Time Tape Counter, Tape Remaining Time**
- **Clean Still, Slow, Frame Advance, Commercial Skip**
- **Auto Tracking Function/Auto Head Cleaner**
- **Onscreen Function Display**
- **Trilingual Onscreen Programming Menus (English/Spanish/French)**

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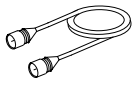
ACCESSORIES

Remote Control	RF Coaxial Cable
	

Check to make sure that all accessories listed to the left have been included with your VCR.

- Depending on your antenna system, you may need a different type of Combiner (Mixer) or Separator (Splitter). These are available at most electronics stores. For further details, see your nearest authorized service center.

IMPORTANT SAFETY INSTRUCTIONS

PLEASE READ AND OBSERVE ALL WARNINGS AND INSTRUCTIONS IN THIS OWNER'S MANUAL. AND THOSE MARKED ON THE PRODUCT. RETAIN THIS BOOKLET FOR FUTURE REFERENCE.

This product has been designed and manufactured to assure personal safety. Improper use can result in electric shock or fire hazard. The safeguards incorporated in this product will protect you if you observe the following procedures for installation, use, and servicing.
This product does not contain any parts that can be repaired by the user.

DO NOT REMOVE THE CABINET COVER, OR YOU MAY BE EXPOSED TO DANGEROUS VOLTAGE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.

1. **Read these instructions. -** All these safety and operating instructions should be read before the product is operated.
2. **Keep these instructions. -** The safety, operating and use instructions should be retained for future reference.
3. **Heed all warnings. -** All warnings on the product and in the operating instructions should be adhered to.
4. **Follow all instructions. -** All operating and use instructions should be followed.
5. **Do not use this product near water. –** For example: near a bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement; or near a swimming pool; and other areas located near water.
6. **Clean only with dry cloth. –** Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners.
7. **Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. -** Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating. The openings should never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
8. **Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.**
9. **Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.**
10. **Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the product.**
11. **Only use attachments/accessories specified by the manufacturer.**

12. **Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with apparatus. When a cart is used, use caution when moving the cart/product combination to avoid injury from tip-over.**
13. **Unplug this product during lightning storms or when unused for long periods of time.**
14. **Refer all servicing to qualified service personnel. Servicing is required when the product has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the product, the product has been exposed to rain or moisture, does not operate normally, or has been dropped.**

VCR FEATURES CHART

Features available on this VCR are listed below.

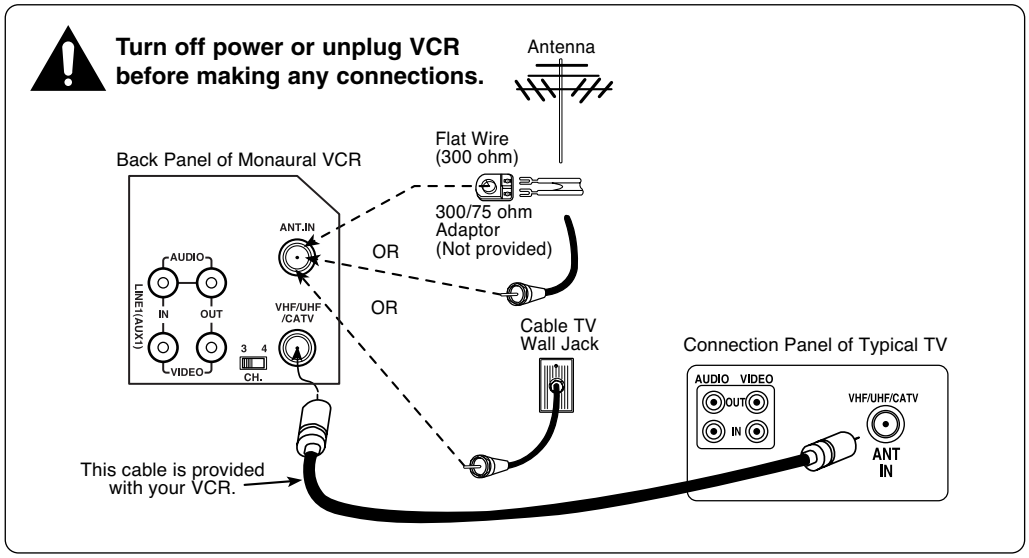
FEATURES
4-Heads (Special Video Effects)
Full Load/Quick Start Playback
Auto Head Cleaner
Monaural Audio System
Monaural Audio/Video (A/V) Jacks
Remote Control
Auto/Manual Band Select
Auto/Manual Channel Search
181 Channel Capability (CATV & TV)
Record Speeds SP/SLP
Playback Speeds SP/LP/SLP
Auto Playback System
Auto/Manual Digital Tracking
Instant Recording
Timer-Controlled Recording
Auto Playback Tape Speed Adjust
1/19 Slow-Motion Video (4-head VCR)
Clear No Noise Pause/Still Video
Real-Time Tape Counter
Visual Search
Logic Search
CM Skip
English/Spanish/French Menus
1-Year, 8-Event Timer
LED Front Panel Indicator
Easy Power On
Easy Review
Easy Information
Auto Clock Set System
Hook-up Cable (VCR to TV)
Energy Saving

VCR design and specifications are subject to change without prior notice.

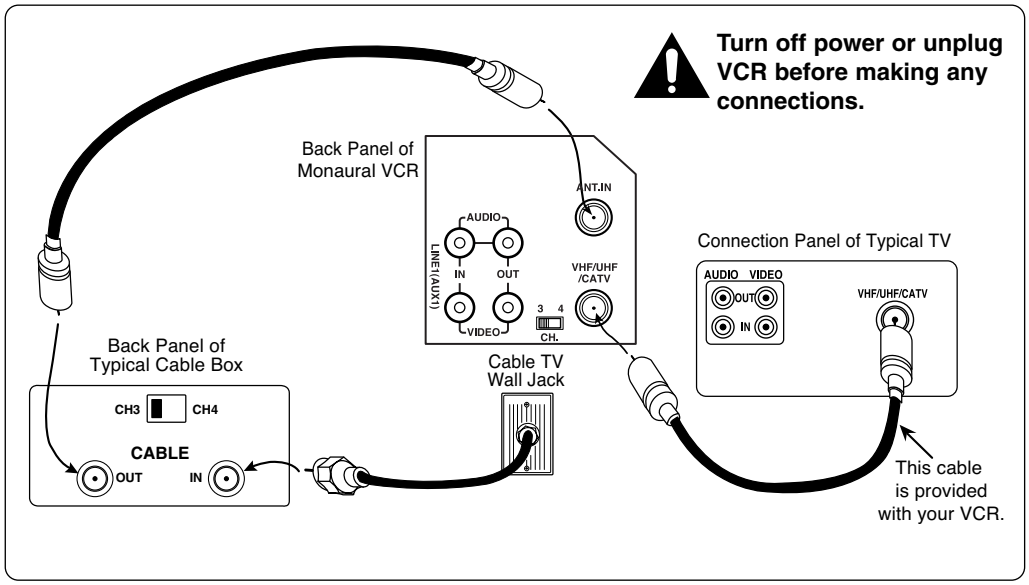
CONNECTIONS FOR YOUR VCR

Required connections for your VCR.

CONNECTIONS WITHOUT A CABLE BOX



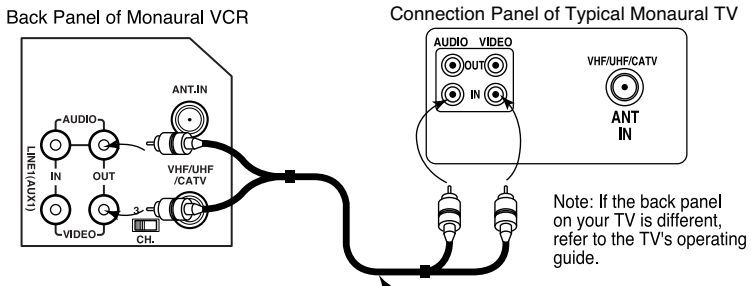
CONNECTIONS WITH A CABLE BOX



CONNECTIONS FOR YOUR VCR (Contd.)

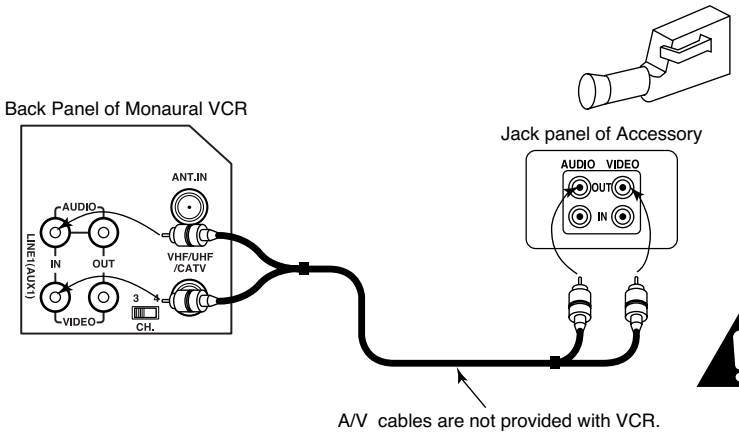
AUDIO/VIDEO (A/V) CONNECTIONS TO TV

Use A/V connections for a better picture.



Turn off power or unplug VCR before making any connections.

CONNECTIONS FOR ACCESSORY EQUIPMENT



Accessory Component: Another VCR, Camcorder, Video Camera, Satellite Receiver, Laser Disc Player

Turn off power or unplug VCR before making any connections.

FRONT PANEL CONTROLS AND FUNCTIONS

FRONT

CASSETTE COMPARTMENT
Insert video cassette here.

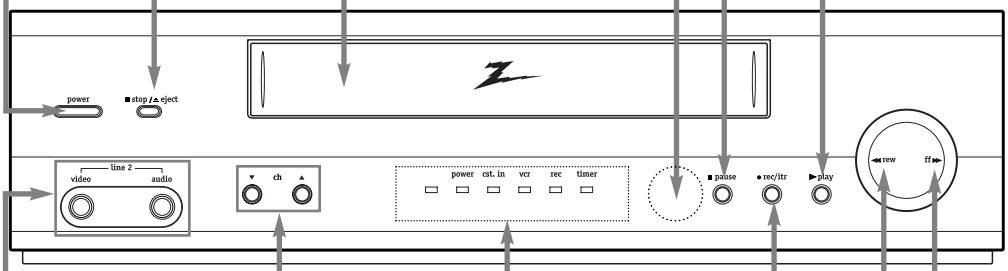
PLAY
To play back a recorded tape (page 21).

POWER
Turns the VCR on and off. While plugged into an AC outlet, the VCR consumes 2W of electrical power when OFF.

PAUSE
To put playback in still mode (page 23) or to pause recording (page 25).

STOP/EJECT
Stops the tape.
Ejects the tape in the VCR.

INFRARED REMOTE SENSOR
Receives the signal from the infrared remote control.



VCR Function Indicator Panel
Details are on the next page.

CHANNEL (▲/▼)
Use to scan up or down through memorized channels (page 16) or to manually adjust the tape's tracking onscreen (page 21).

REC/ITR
To record normally (page 25) or to activate Instant Timer Recording (page 29).

REW (Rewind)
To rewind the tape while in STOP mode or for fast reverse picture search (page 23).

VIDEO IN/AUDIO IN JACKS (LINE2)
Connect the audio/video output cable from an external unit (Audio system, TV/Monitor, Another VCR) to these jacks.

NOTE
Use **INPUT** on remote to select A/V input channels (LINE1 or LINE2).

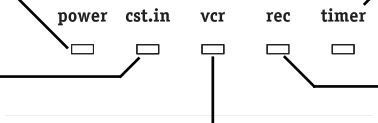
FF (Fast Forward)
To advance the tape while in STOP mode or for fast forward picture search (page 23).

FRONT PANEL CONTROLS AND FUNCTIONS (Contd.)

INDICATOR PANEL

POWER indicator
Lights while a VCR is turned on.

TAPE IN indicator
Lights while a cassette is inserted, and flashes while ejecting a cassette.



TIMER indicator

REC (record) indicator

VCR indicator
Use **TV/VCR** on the remote control to turn this indicator ON or OFF.
ON: for playback, VCR programming or watching TV programs through the VCR tuner
OFF: for watching TV programs through TV tuner

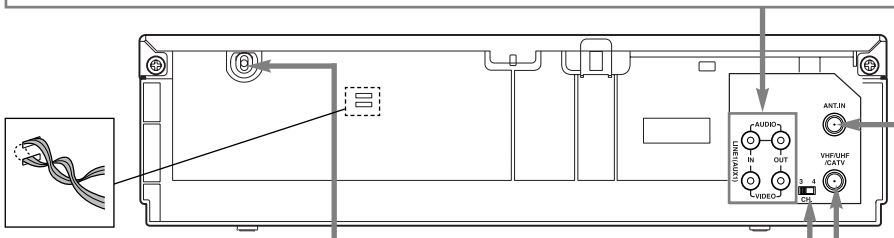
CONNECTION PANEL

REAR

ANTENNA INPUT CONNECTOR
Connect the VHF/UHF/CATV antenna to this terminal.

AUDIO OUT JACK: Connect this output jack to the audio input on an external unit (Audio System, TV/Monitor, Another VCR).
VIDEO OUT JACK: Connect this output jack to the video input on an external device (TV/Monitor, Another VCR).
AUDIO IN JACK: Connect the audio output cable from an external device (Audio system, TV/Monitor, Another VCR) to this jack.
VIDEO IN JACK: Connect the video output cable from an external device (TV/Monitor, Another VCR) to this jack.

NOTE
Use **INPUT** to select A/V input channels (LINE1 or LINE2).



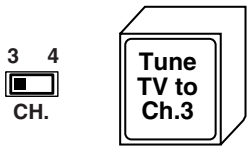
WARNING : Do not drop the power cord tying band into the unit. Doing so might cause a fire or an electrical shock.

VCR OUTPUT CHANNEL SELECT SWITCH
Set this switch to channel 3 or 4.

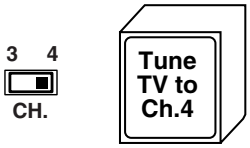
VHF/UHF/CATV ANTENNA OUTPUT CONNECTOR
Connect this terminal to the VHF or UHF antenna terminals on the back of a TV.

POWER CORD
Connect only to an AC 120V, 60Hz outlet.

SET POSITION OF THE CH3/CH4 SWITCH



OR

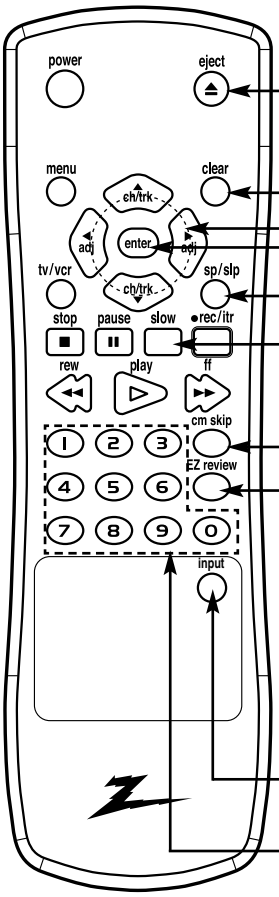


The CH3/CH4 switch on the VCR's back panel determines which channel the VCR uses to send video signals to your TV. The TV must be tuned to the same channel you set with the CH3/CH4 switch to see tape playback and status displays from the VCR. To determine which video channel provides the best picture for your system, try the switch in CH3 position and tune your TV to channel 3; then try the CH4 position and tune your TV to channel 4.

For a test display, press **TV/VCR** on remote repeatedly until the VCR indicator light appears in the VCR's front panel display. Press **MENU** on the remote to see the main menu.

REMOTE CONTROL

The remote control is used for most of the operations and features of the VCR. Before proceeding, put batteries in the remote and become familiar with the buttons. Use only type AAA batteries. The maximum operating distance is about 25 feet.
The **POWER, PLAY, PAUSE, FF, REW** and **REC/ITR** buttons on the remote control unit perform the same functions as the corresponding buttons on the VCR. The following buttons are on the remote control unit only.



EJECT
To eject the tape in the VCR (page 18).

CLEAR
Cancels a timer recording (page 28).
Resets tape counter to 0:00:00 (page 32).

▲ ▼ ◄ ► ARROWS
Move up, down, left, right one row, column, or selection (hold to repeat) (pages 14, 15).

ENTER
Accesses the onscreen menu (page 14).
Displays functions on the TV screen. Switches among the clock, tape counter and tape remaining modes on the display (pages 13, 32).

SP/SLP
Use to select recording speed (page 25).

SLOW
For slow motion playback (page 24).

CM SKIP
To fast forward picture search through 30 seconds of recording (page 24).

EZ REVIEW
Replays the specified segment twice.

INPUT
Select the VCR's line inputs or tuner.

NUMBER buttons
Use these buttons, numbered 0-9, to select a channel.

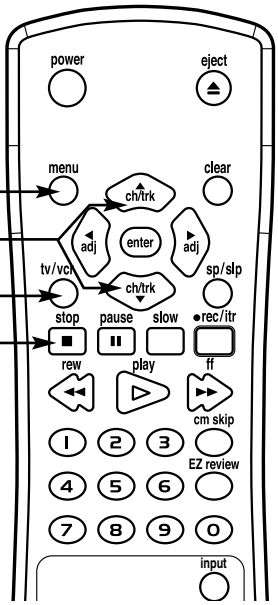
REMOTE CONTROL (Contd.)

MENU
Displays the programming menu on the TV screen. Quits the current screen or Pop-up, or returns to the currently tuned channel (pages 14, 16).

CH/TRK (Channel/Tracking) (▲/▼)
- To scan up or down through memorized channels (page 16).
- To eliminate video noise from the tape's picture (page 21).

TV/VCR
To view channels selected by the VCR tuner or by the TV tuner (pages 10, 25).

STOP
To stop playback or recording (pages 21, 25).



REMOTE CONTROL OPERATION

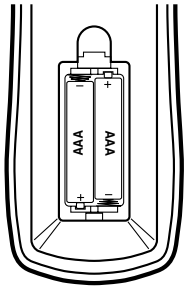
Aim the remote control at the sensor on the front panel of the VCR.

HOW TO INSTALL THE BATTERIES

1. Remove the battery compartment cover.

2. Insert 2 "AAA"-size batteries, match "**+**" and "**-**".

3. Replace the cover.



NOTES

- The remote control will not operate properly if something comes between the VCR and the remote control.
- If the effective range is short, try new batteries.
- An object between the VCR and remote control may block the invisible light beam and operation will be impossible.
- Batteries installed with incorrect polarity may leak and damage your Remote Control.
- Do not mix old and new batteries or carbon types with alkaline types.
- Remove the batteries from the battery compartment if the remote control will not be used for a long time.

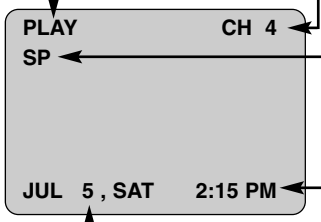
ONSCREEN DISPLAYS (OSD)

PREPARATION

- Turn on the power of both the VCR and TV.
- Tune the TV to the VCR output channel (CH 3 or 4).
- If a direct VIDEO/AUDIO connection is made between the VCR and the TV, set the TV's source selector to VIDEO.

ONSCREEN FUNCTION DISPLAYS

Some of these functions will be displayed every time the VCR is operated.



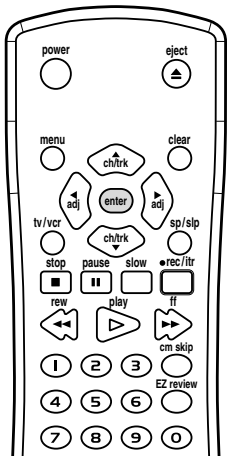
FUNCTION DISPLAY
Indicates the function in progress.

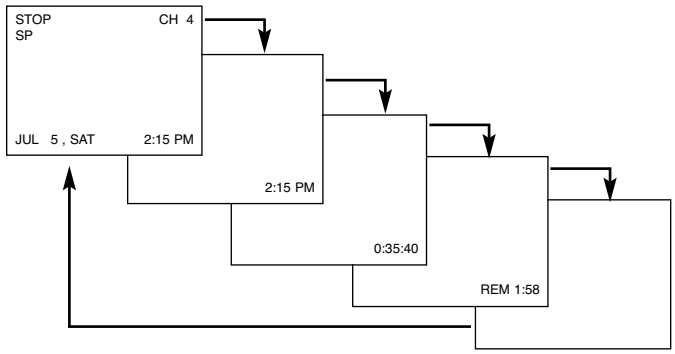
CHANNEL DISPLAY
Indicates the selected channel (or LINE1, LINE2).

TAPE SPEED DISPLAY
Shows the current tape speed.

CLOCK/COUNT/REMAIN DISPLAY
Shows the current time, the tape counter, and remaining time on the tape.

DATE DISPLAY
Shows the current date. (Month/Date/Day of the week format)
Each press of the **ENTER** button changes the TV screen display in the following sequence.

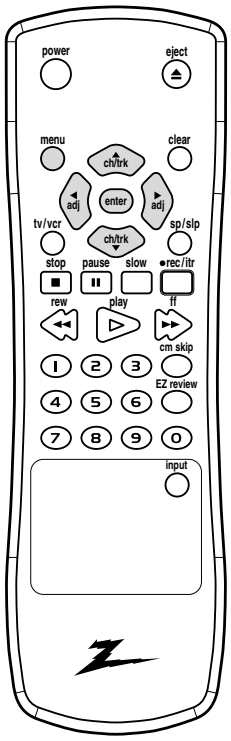




NOTES

- The function displays can be seen displayed on the TV screen for 5 seconds.
- The clock (or tape counter, tape remaining) mode will remain on the screen until you press **ENTER**.
- The tape counter and the remaining tape length indicator appear only when a cassette is inserted. Also, the remaining tape length indicator appears after any tape operation.

ONSCREEN MENUS OVERVIEW



The SETUP, clock setting (Clock Set), and timer recordings (Program) features are conveniently accessible using the onscreen menus. The following pages describe the Main and sub menus.

PREPARATION

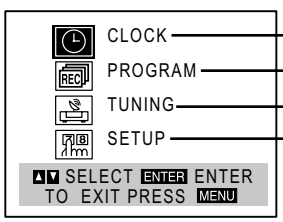
- Turn on the power of both the VCR and TV.
- Tune the TV to the VCR output channel (CH 3 or 4).
- If a direct VIDEO/AUDIO connection is made between the VCR and the TV, set the TV's source selector to VIDEO.

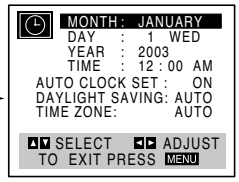
MENU SELECTION

Use the remote control to adjust the VCR's features.

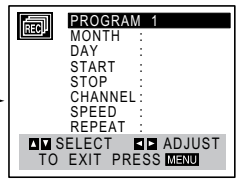
1. Press **MENU** and the MAIN menu will appear.

2. Select the desired menu with the ▲ or ▼ button and then press **ENTER**.

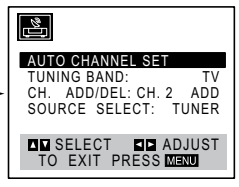




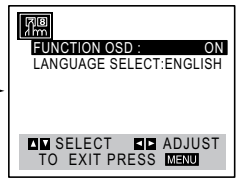
CLOCK SET (pages 19-20)



PROGRAM (pages 26-28)



TUNING (pages 16-17)



SETUP (page 15)

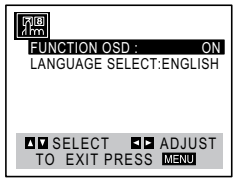
NOTE

- Menus remain on the screen for 3 minutes.

SETUP MENU FEATURES AND OPERATION

MAIN MENU

SETUP MENU



Use ▲ or ▼ to choose a desired option on the SETUP menu. Then use ◄ or ► to choose a desired setting.

FUNCTION OSD

The onscreen display of this VCR can be turned on or off.

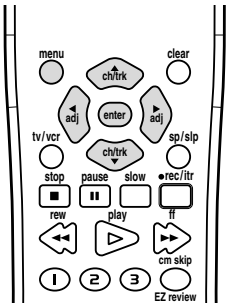
Set up the FUNCTION OSD option by selecting ON or OFF using ◄ or ►.

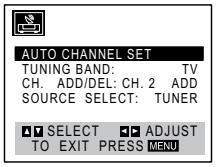
LANGUAGE SELECT

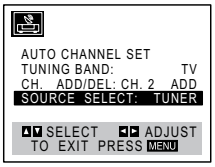
The onscreen programming menus of this VCR can be displayed in either English, Spanish, or French.

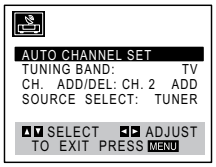
Go to the LANGUAGE SELECT option and select ENGLISH, SPANISH, or FRENCH using ◄ or ►.

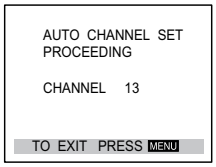
CHANNEL/SOURCE SELECTION

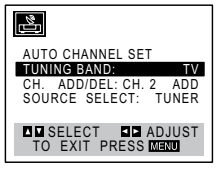












This VCR is equipped with a frequency synthesized tuner capable of receiving up to 181 channels. These include VHF channels 2-13, UHF channels 14-69 and CATV channels 1-125.

PREPARATION

- Connect the VCR to the desired type of antenna or cable TV system, as shown in ANTENNA TO VCR CONNECTIONS and CABLE ANTENNA (CATV) CONNECTION (page 6).
- Switch on the power to the VCR and TV.
- Tune the TV to the VCR output channel (CH 3 or 4).

AUTO CHANNEL PROGRAMMING

1. Press **MENU** and the MAIN menu will appear.

2. Use ▲ or ▼ to select the TUNING menu option, then press **ENTER**. The TUNING menu will appear.

3. Use ▼ to choose the SOURCE SELECT option, then Use ◄ or ► to select TUNER.

Press ◄ or ► repeatedly to select TUNER, LINE1 or LINE2.

4. Use ▲ or ▼ to choose the AUTO CHANNEL SET option, then press ◄ or ► to start the channel search.

The VCR will automatically search for all available active channels in the area and place them in the tuner's memory.

5. Select the TUNING BAND: TV or CATV.
TV is for over the air antenna reception.
CATV is for cable or wireless cable subscribers.
Use ▲ or ▼ to choose the TUNING BAND option, then use ◄ or ► to select TV or CATV.

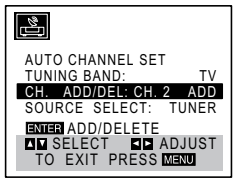
6. Press **MENU** to return to the TV screen.

Use **CH/TRK (▲/▼)** or **CH (▲/▼)** on the front panel to cycle through the channels in the VCR's memory.

CHANNEL SELECTION (Contd.)

MAIN MENU

TUNING MENU



TO ADD OR ERASE CHANNELS FROM MEMORY

This feature allows you to add or erase channels from memory manually.

1. Press **MENU** and the MAIN menu will appear.

2. Use ▲ or ▼ to select the TUNING menu option, then press **ENTER**. The TUNING menu will appear.

3. Use ▼ to choose the CH. ADD/DEL option. Use ◄ or ► to select a channel to add or erase.

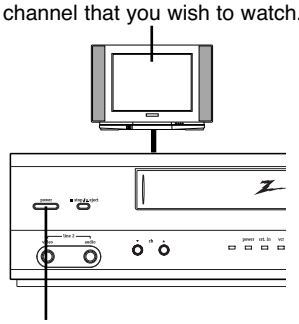
4. Use **ENTER** to add or erase the channel.

Repeat steps 3 and 4 to add or erase channels.

5. Press **MENU** to return to the TV screen.

VIEWING TV ONLY

Turn on the TV and tune it to the channel that you wish to watch.



Set **POWER** to OFF.

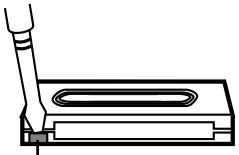
You don't need to disconnect the VCR from the TV to watch TV separately. When the VCR's power is OFF, or when the VCR's power is ON and the **TV/VCR** selector is set to TV, the TV will operate as if it were connected directly to the antenna or cable.

NOTES

- The power cord must be plugged into an AC outlet.
- To view or record cable TV programs with the VCR, the VCR's TUNING BAND option must be set to CATV (TUNING menu).
- Do not place the VCR directly on top of the TV. This may cause interference in the picture and sound (of the VCR) during the recording or playback mode. If this interference occurs, move the VCR away from the TV.

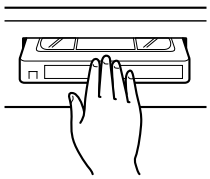
VIDEO CASSETTE TAPES

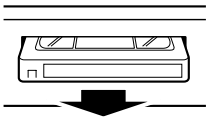
SAFETY TAB



To prevent accidental erasure, remove the tab after recording.

To record again cover the hole with vinyl tape.





This VCR will operate with any video cassette which has the VHS mark. The table below shows the recording/playback time of VHS cassettes when they are used in the SP, LP and SLP speeds. (LP speed is for playback only.)

TYPE / SPEED	T-60	T-120	T-160
SP MODE	60 mins.	120 mins.	160 mins.
LP MODE	120 mins.	240 mins.	320 mins.
SLP MODE	180 mins.	360 mins.	480 mins.

WHEN HANDLING VIDEO CASSETTES

- Do not expose video cassettes to extreme heat, high humidity, or strong magnetic fields.
- Do not tamper with the cassette mechanism.
- Do not touch the tape with your fingers.
- Always store an unused cassette in its case.

LOADING

Hold the cassette with the arrow side up (top). Insert the cassette gently into the slot in the direction of the arrow (on the cassette) until the loading mechanism automatically pulls the cassette into the unit. Make certain that the cassette is inserted correctly.

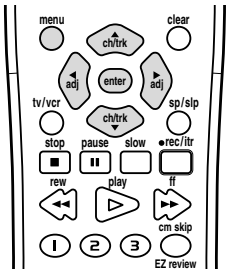
- If the cassette is not loaded correctly, the VCR will eject the cassette automatically after approximately 3 seconds.

UNLOADING

Press **STOP/EJECT** twice or press **EJECT** on the remote control. The cassette will be ejected automatically. After the cassette is visible in the tape slot, pull it out to remove it.

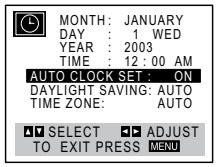
- Unloading the cassette is possible only if the power cord is connected to a wall power outlet.
- The cassette can be ejected by pressing **STOP/EJECT**, even if the VCR's power is OFF.

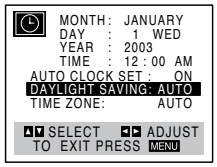
SETTING THE CLOCK

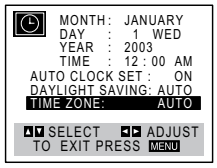


MAIN MENU

CLOCK MENU







NOTE

There are cases where a TV station did not send or sent wrong date and/or time information and the VCR set the time incorrectly.
In this case we recommend that you set the clock manually.

Things to know before starting

- The clock uses the 12-hour system. (Be sure to set AM and PM correctly.)
- The buttons for setting the clock are on the remote control.
- An illogical date will not be accepted (for example: February 30).
- The initial Clock Setting is **JANUARY 1, 2003, 12:00 AM**.

PREPARATION

- Turn on the power of both the VCR and TV.
- Tune the TV to the VCR output channel (CH 3 or 4).
- If a direct VIDEO/AUDIO connection is made between the VCR and the TV, set the TV's source selector to VIDEO.

The VCR gives you two ways to set the time and date: the Auto Clock Feature or manually. The Auto Clock Feature enables the VCR to set up the clock when the VCR is turned off.

AUTO CLOCK SET

1. Press **MENU** and the MAIN menu will appear.

2. Use ▲ or ▼ to choose the CLOCK menu option.
Press **ENTER** and the CLOCK menu will appear.

3. Use ▼ to choose the AUTO CLOCK SET option.
Use ◄ or ► to choose ON.

The Auto Clock Set feature is set to ON at the factory. In the ON setting, the VCR looks for a channel carrying XDS (Extended Data Services) information. XDS updates the clock using the Coordinated Universal Time.

4. Use ▼ to choose the DAYLIGHT SAVING option.
Use ◄ or ► to choose AUTO, ON or OFF.

If you choose AUTO, the VCR sets the clock using the DST information broadcast in the signal (channel).
If you choose ON, the VCR sets the clock when the Daylight Saving Time is started and ended.

5. Use ▼ to choose the TIME ZONE option.
Use ◄ or ► to choose the correct time zone (AUTO, EASTERN, CENTRAL, MOUNTAIN, PACIFIC, ALASKA, or HAWAII).

If "AUTO" is selected as the time zone, the VCR sets the clock using the first Coordinated Universal Time information it finds in a broadcast signal.

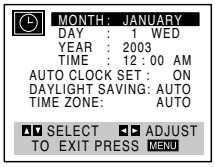
6. Press **MENU** when finished.

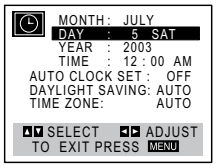
7. Turn off the VCR to complete auto clock setting.

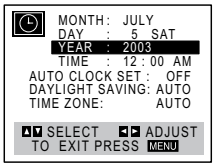
SETTING THE CLOCK (Contd.)

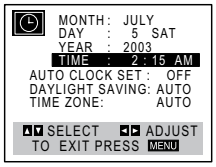
MAIN MENU

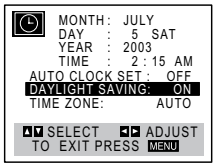
CLOCK MENU











MANUAL CLOCK SET

Example: JULY 5, 2003 ; 2:15 AM

1. Press **MENU** and the MAIN menu will appear.

2. Use ▲ or ▼ to choose the CLOCK menu.
Press **ENTER** and the CLOCK menu will appear.

3. Use ◄ or ► to choose the month.

4. Use ▼ to choose the DAY option.
Use ◄ or ► to choose the date.

The day of the week will display automatically.

5. Use ▼ to choose the YEAR option.
Use ◄ or ► to choose the year.

6. Use ▼ to choose the TIME option.
Use ◄ or ► to choose the time.

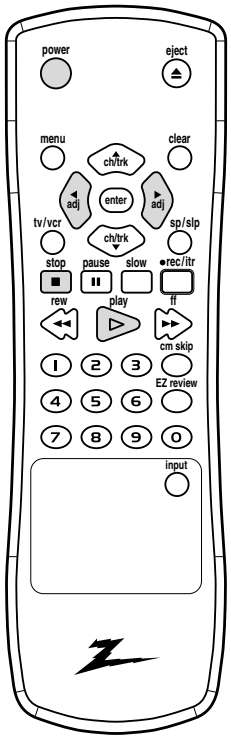
7. Use ▼ to choose the DAYLIGHT SAVING option.
Use ◄ or ► to choose the ON or OFF option.

8. Press **MENU** when finished.

NOTE

"AUTO CLOCK SET" must be set to "OFF". If set to "ON", an incorrect date and/or time will be entered again when the VCR is turned off.

NORMAL PLAYBACK



PREPARATION

- Turn on the TV.
- Tune the TV to the VCR output channel (CH 3 or 4).
- If a direct VIDEO/AUDIO connection is made between the VCR and the TV, set the TV's source selector to VIDEO.

NORMAL PLAYBACK

1. Insert a prerecorded video cassette.

The CST.IN indicator will light and the VCR will power-up automatically.

- Make sure that the TIMER indicator in the VCR indicator panel is not lighted. If it is, press **POWER** once.
- If a tape without a safety tab is inserted, the VCR will start playback automatically.

2. Press **PLAY** once.

PLAY appears on the TV screen.

- It is not necessary to select the tape speed for playback. It will be automatically selected by the VCR.
- In playback, the **TV/VCR** selector switches to VCR mode automatically.

3. Press **STOP** to stop playback.

STOP appears on the TV screen.

- If the tape reaches the end before **STOP** is pressed, the VCR will automatically stop, rewind, eject the tape, and turn itself off.

TRACKING CONTROL

AUTO TRACKING

The automatic tracking function adjusts the picture to remove snow or streaks.

The AUTO TRACKING function works in the following cases:

- A tape is played back for the first time.
- Tape speed (SP, LP, SLP) changes.
- Streaks or snow appear because of scratches on the tape.

MANUAL TRACKING

If noise appears on the screen during playback, press either **CH/TRK (▲/▼)** on the remote control or **CH (▲/▼)** on the front panel until the noise on the screen is reduced.

- In case of vertical jitter, adjust these controls very carefully.
- Tracking is automatically reset to normal when the tape is ejected or the power cord is unplugged for more than 3 seconds.

NORMAL PLAYBACK (Contd.)

AUTO PLAY SYSTEM

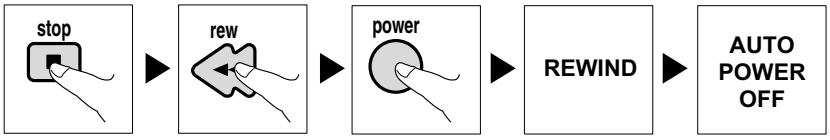
This VCR features fully automatic playback and rewind.
Load a cassette (with the safety tab removed).

- The power turns on automatically and playback begins.
- At the end of the tape, the VCR stops, then rewinds the tape.
- The cassette is ejected after rewinding and the VCR turns itself off automatically.

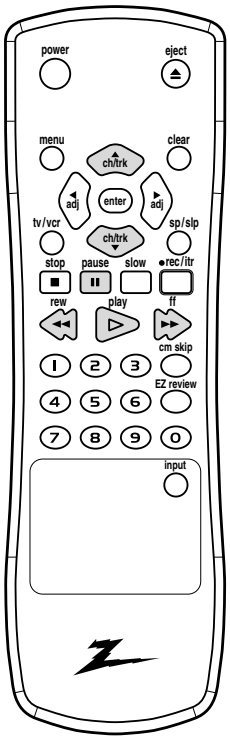
AUTO POWER SHUT-OFF FUNCTION

This feature is especially helpful when you finish watching a tape. Press **STOP, REW,** and **POWER**. The VCR will rewind the tape and turn itself off automatically.

1. Press **STOP** when you finish watching a tape.
2. Press **REW** to rewind the tape.
3. Press **POWER** during the REWIND mode, the VCR will enter the AUTO POWER SHUT-OFF mode.
4. The POWER indicator will flash on the VCR indicator panel.
5. After tape is rewound, VCR will turn off automatically.



SPECIAL EFFECTS PLAYBACK



These special effects are available during playback.

TO WATCH A STILL (or Frame Advance) PICTURE

During PLAYBACK mode...

1. Press **PAUSE**.

Still picture will appear on the TV screen.

- If a still picture vibrates vertically, stabilize it using **CH/TRK (▲/▼)** on the remote control.
- If the VCR is left in the STILL mode for more than 5 minutes, the VCR will automatically enter the Stop mode to protect the tape and video heads.

2. Press **PAUSE** repeatedly to advance the video picture one frame at a time while viewing a still picture.

3. To continue normal playback, press **PLAY**.

VISUAL SEARCH FUNCTION

This function lets you quickly and visually search for a desired tape section in either direction, forward or reverse.

During PLAYBACK mode...

1. Press desired search button (**FF** or **REW**).

The VCR will activat SEARCH mode.

- If the VCR is left in the SEARCH mode for more than 3 minutes, the VCR will automatically enter the PLAY mode, to protect the tape and video heads.

2. To continue normal playback, press **PLAY**.

LOGIC SEARCH FUNCTION

The VCR must be in the Stop mode.

1. Press **FF** or **REW** once. Fast winding begins.

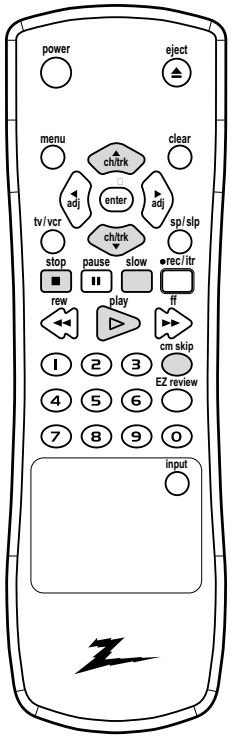
2. Press and hold **FF** or **REW** again.

Visual search (Cue/Review) begins so you can check what is on the tape.

- The CUE or REVIEW mode will continue until the **FF** or **REW** button is released.

3. When released, Fast Forward or Rewind resumes.

SPECIAL EFFECTS PLAYBACK (Contd.)



USING THE SLOW MOTION FEATURE

During PLAYBACK mode...

1. Press **SLOW**.

The tape will be played back at a speed 1/19 times slower than the normal speed.

- During slow playback, **CH/TRK (▲/▼)** on the Remote Control can be used to minimize noise bands.
- If Slow mode continues for more than 3 minutes, the VCR will automatically change to PLAYBACK mode.

2. Press **PLAY** to return to normal playback speed or press **STOP** to stop tape movement.

CM SKIP (Commercial Skip)

This is useful for skipping commercials or short program segments.

During PLAYBACK mode...

1. Press **CM SKIP**.

The tape will fast forward picture search through 30 seconds of recording.

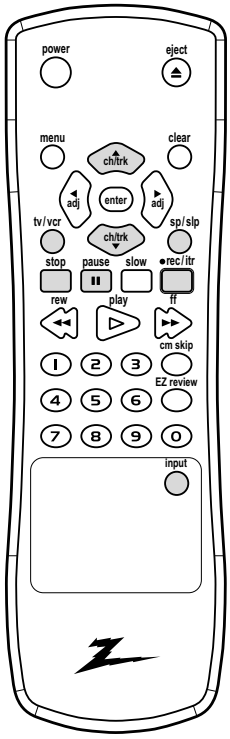
The skipping time can be extended by pressing **CM SKIP**. Subsequent presses result in advancing the fast forward picture search time by 30-second increments (maximum 3 minutes).

2. When the search is complete, the VCR will go into PLAYBACK mode automatically.

SPECIAL EFFECTS PLAYBACK NOTES:

- Horizontal lines (noise bars) will appear on the TV screen. This is normal.
- The audio is automatically muted during special effect modes, so there is no sound during search.
- During the high-speed picture search modes, a short period is needed to stabilize tape speed when re-entering the PLAY mode. Slight interference may be observed during this period.

NORMAL RECORDING



Always use **PAUSE** for best results when making changes during recording. For example: To change channels during recording, first press **PAUSE** to put the unit in pause mode. Then select the desired channel on the VCR, and press **PAUSE** again to resume recording.

PREPARATION

- Turn on the power of both the VCR and TV.
- Tune the TV to the VCR output channel (CH 3 or 4).
- If a direct VIDEO/AUDIO connection is made between the VCR and the TV, set the TV's source selector to VIDEO.

1. Insert a video cassette with the safety tab in place.

2. Select the desired channel by using **CH/TRK (▲/▼)**.

- If you are recording from an external source via audio/video input jacks (at the Rear or Front panel), select LINE1 or LINE2 using the **INPUT** button.

3. Set the desired speed (SP or SLP) using **SP/SLP**.

- This VCR is not designed to record in LP mode.

4. Press **REC/ITR** once.

Recording will start.
(REC indicator will light on the VCR indicator panel)

- If a cassette with no safety tab is loaded, the cassette will be ejected automatically.

5. Press **STOP** to stop recording.

- If the tape reaches the end before **STOP** is pressed, the VCR will automatically stop, rewind, eject the tape, and turn itself off.

To PAUSE the recording

During the RECORDING mode...

1. Press **PAUSE** to pause the tape.

The REC indicator will flash on the VCR indicator panel.

2. When you want to continue recording, press **PAUSE** again or press **REC/ITR**.

- After 5 minutes in pause mode, the tape will be stopped automatically to protect the tape and the video heads.

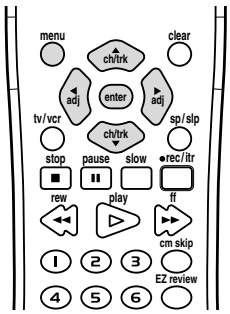
To record one TV program while watching another

1. Press **TV/VCR** to select the TV mode during recording.

The VCR indicator disappears.

2. Using the TV tuner, select the channel to be viewed.

TIMER RECORDING

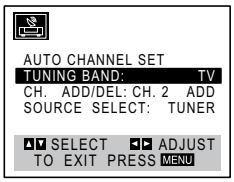


This VCR can be programmed to record up to 8 programs within a period of 1 year. For unattended recording, the timer needs to know the channels to be recorded and the starting and ending times.

Things to know before starting

- If you try to set the program timer before setting the clock, PLEASE SET THE CLOCK appears for a moment and then CLOCK menu appears on the TV screen. Set the time and date before proceeding.
- The display contents will be automatically replaced by TV programs after 3 minutes.
- Make sure a tape is in the VCR and the safety tab is in place or the tape will be automatically ejected.

TUNING MENU



PREPARATION

- Turn on the power of both the VCR and the TV.
- Tune the TV to the VCR output channel (CH 3 or 4).
- Make sure the TUNING BAND in the TUNING menu is set appropriately (TV or CATV) (see illustration left).

RECORDING

MAIN MENU

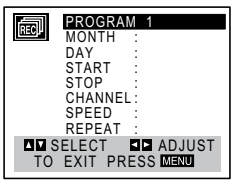
1. Press **MENU** and the MAIN menu will appear.

2. Use ▲ or ▼ to choose the PROGRAM menu.

3. Press **ENTER** to go to the PROGRAM menu.

The PROGRAM menu will appear.

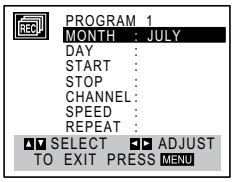
- If all programs have already been entered, FULLY PROGRAMMED message will appear for a moment and then PROGRAM 1 will appear on the TV screen.



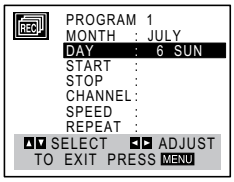
4. Use ◄ or ► to choose the PROGRAM No. (1-8).

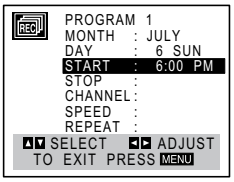
5. Use ▼ to choose the MONTH option.
Use ◄ or ► to choose the desired month.

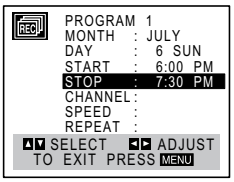
Example JULY.

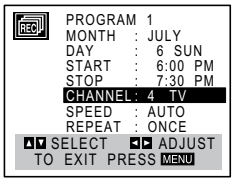


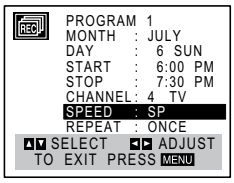
TIMER RECORDING (Contd.)

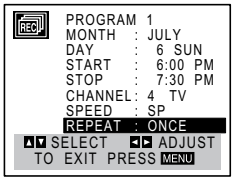












6. Use ▼ to choose the DAY option.
Use ◄ or ► to choose the desired day.

Example: 6 SUN

7. Use ▼ to choose the START option.
Use ◄ or ► to choose the desired start time.

Example: 6:00 PM

8. Use ▼ to choose the STOP option.
Use ◄ or ► to choose the desired stop time.

Example: 7:30 PM

9. Use ▼ to choose the CHANNEL option.
Use ◄ or ► to choose the desired channel (Channel XX, LINE1 or LINE2).

Example CH 4

Cable Users: If you have CABLE TV and used the Cable Box setup on the Cable Connections (page 7) using a cable box converter, you must tune the VCR to the cable box output channel (usually CH 3 or 4). Change channels with the cable box instead of the VCR.

10. Use ▼ to choose the SPEED option.
Use ◄ or ► to choose the desired tape speed (AUTO, SP, or SLP).

Example SP

- The AUTO mode determines how much tape is left and switches speed from SP to SLP, if necessary, to complete recording the program. There will be some picture and sound distortion at the point of the speed change.

11. Use ▼ to choose the REPEAT option.
Use ◄ or ► to choose the desired repeat (ONCE, WEEKLY, or DAILY).

Example: ONCE

ONCE event....for recording up to 8 programs on a single day within a period of 1 year.

WEEKLY event....for recording up to 8 programs on a certain day of every week.

DAILY event....for recording up to 8 programs at the same time(s) Monday through Friday.

If the recording data is wrong, Use ▲ to select the data and correct it using ◄ or ►.

TIMER RECORDING (Contd.)

12. Press **MENU**, the program will be memorized by the VCR.

- If the program preset time is past, the PAST TIME PROGRAMMED message will appear on the TV screen. Return to the incorrect program and reprogram it with the correct time.
- If you had entered a past date, the timer recording will be performed on that date of the next year.
- Additional programs may be entered by repeating steps **1-12**.

13. Turn the VCR off. (VCR must be off for Timer Recording to begin)

Cable Users: If your cable hookup is via a TV converter box, you can program multiple recordings only on the converter box output channel. This is because the converter determines what channel you view through your VCR.

If you are finished programming and you want to set the VCR to record the programs you have entered. **A) MAKE SURE YOU HAVE INSERTED A TAPE INTO THE VCR. B) YOU MUST TURN OFF THE VCR BEFORE IT WILL RECORD ANY TIMER PROGRAMS. (TIMER indicator lights).** The VCR is now set to record the preset programs.

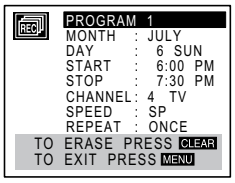
The VCR must be off for Timer Recording to work!

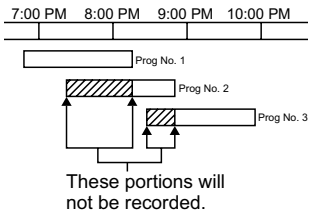
You can stop timer recording by pressing POWER during timer recording.

If the power fails or the VCR is unplugged from the AC outlet, the correct clock time and timer settings are kept in memory for approximately 3 seconds. After 3 seconds, the clock and program timer must be reset when power is restored. Reset time according to instructions.

MAIN MENU

PROGRAM MENU





CHECKING (ERASING) A TIMER PROGRAM

Programming can be checked whenever the VCR is turned on.

1. Press **MENU** and the MAIN menu will appear.

2. Use ▲ or ▼ to choose the PROGRAM menu. Press **ENTER** and the PROGRAM menu will appear.

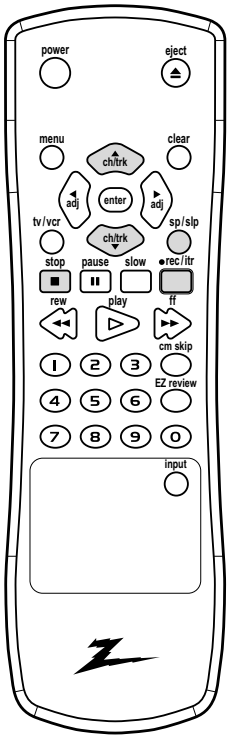
3. Use ◀ or ▶ to select a program you want to check or erase. If you want to erase the program, press **CLEAR**.

4. Press **MENU** to return to the TV screen.

PROGRAM PRIORITY

If the recording start and end times of preset programs overlap on the same day (see the example and diagram left), program number 2 will not be recorded until program number 1 is finished. The first part of program number 2 will not be recorded. The same thing will happen to program number 3.

INSTANT TIMER RECORDING



Instant Timer Recording allows you to make a recording easily of a preset length without using the program timer.

PREPARATION

- Turn on the power of both the VCR and the TV.
- Tune the TV to the VCR output channel (CH 3 or 4).
- If a direct VIDEO/AUDIO connection is made between the VCR and the TV, set the TV's source selector to VIDEO.

1. Insert a video cassette with the safety tab in place.

2. Select the desired channel by using **CH/TRK (▲/▼)** or number (**0**-**9**).

The channel number appears on the TV screen.

- If you are recording from another source via audio/video input jacks (at the Rear or Front panel), select LINE1 or LINE2.

3. Set the TAPE SPEED option to desired speed (SP or SLP) by pressing **SP/SLP** repeatedly.

The tape speed will appear on the TV screen.

4. Press **REC/ITR** twice.

The menu as illustrated, will appear on the TV screen. Recording will start (The TIMER indicator will light).

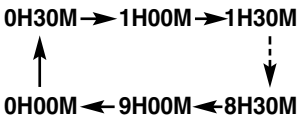
5. Press **REC/ITR** repeatedly to select the recording time length.

At the end of recording the display will read **0H00**, the VCR will stop recording and shut off.

- During Instant Timer Recording, changing the channel on the VCR will not be possible.
- You can stop the recording by pressing **STOP**.

INSTANT TIMER RECORD MENU

INSTANT TIMER RECORD	
CHANNEL	2 CATV
SPEED	SP
START	NOW
LENGTH	0H30M



Length Display (each press increases recording by 30 minutes)

CHECKING THE RECORDING TIME

Press **REC/ITR** once to check the recording time. The recalled setting will automatically return to the TV screen after 6 seconds.

TO EXTEND THE RECORDING TIME

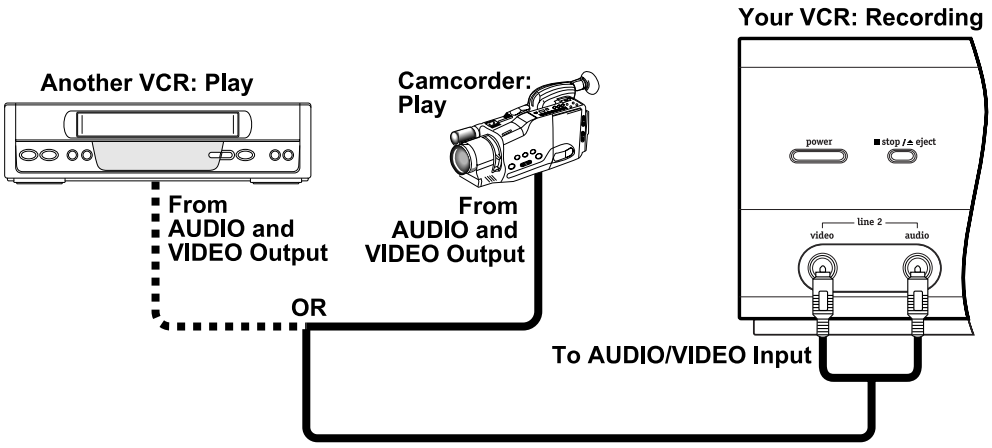
The recording time can be extended anytime by pressing **REC/ITR**. Subsequent presses result in advancing the recording time by 30-minute increments.

NOTES

- If you press **PAUSE** during instant timer recording, the VCR will enter the normal recording mode.
- If the VCR is set to "0H00M", the VCR goes to normal recording mode.

DUBBING AND EDITING

If you wish to edit or dub your camcorder (or another VCR) recordings to this VCR, the rear (or Front) panel mounted Audio and Video (A/V) input jacks make the connections quick and easy. The direct A/V jacks will also provide better picture results than using the RF jack on the rear panel.



1. Connect the camcorder's (or another VCR's) A/V outputs to the VCR's front A/V inputs as illustrated above.

2. Select the input channel "LINE2".
- If you have connected your VCR to the A/V input jacks on the rear of VCR, you should select the input channel LINE1.
- Select LINE1 or LINE2 A/V input channel using **INPUT**.

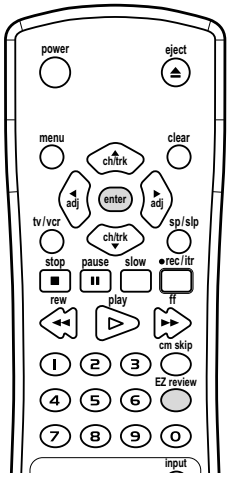
3. Play the tape in the camcorder (or another VCR). If you have a TV connected to your VCR, you can see the video playing.

4. When you desire recording to begin, press VCR's **REC/ITR** once to start.

NOTE

Before recording, please confirm the recording start position.

EASY FUNCTIONS



This page explains how to operate the easy functions.

EASY OPERATION

If you press **PLAY, FF, REW, EJECT** or **REC/ITR** button when the power of this unit is off and a tape is inserted, the power turns on automatically and then the appropriate operation will begin as indicated below.

Press	Operation
PLAY	Power On → Play back the tape
FF	Power On → Fast-forward the tape
REW	Power On → Rewind the tape
EJECT	Eject the tape → Power Off
REC/ITR	Power On → Enter pause record mode If a cassette with no safety tab is loaded, the cassette will be ejected automatically.

EASY REVIEW

You can replay a specified segment twice.

1. During playback, press and hold **EZ REVIEW** for more than 3 seconds at the end of the segment and your VCR will start reverse search.

2. Release **EZ REVIEW** at the beginning of the segment. The segment is replayed twice automatically.

To return to normal play, press **EZ REVIEW** again during easy review playback.

EASY INFORMATION

If the Extended Data Service (XDS) signals are provided along with normal TV signal in your area or during playback of a tape recorded with Extended Data Service (XDS) signals, the station ID, program title and program details are shown on the TV screen.

When viewing a channel with Extended Data Service (XDS) signals, press **ENTER** button then the station ID will appear on the TV screen. Press **ENTER** button again and the program details will appear on the TV screen.

When viewing a tape recorded with Extended Data Service (XDS) signals, press **ENTER** button twice then the program title and program details will appear on the TV screen.

Program Details

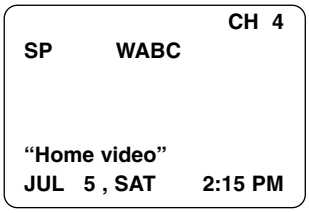
Length: Indicates the run length of a program.

Time Remaining: Indicates the remaining time of a program.

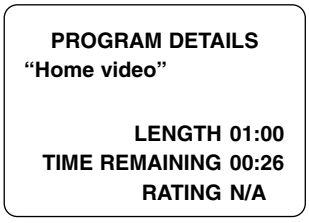
Rating: Indicates the rating of the current program (N/A, G, PG, PG-13, R, NC-17, X and Not Rated). The rating N/A means that the motion picture ratings are not applicable to this program.

NOTE

Easy Information may not be available on all programs.

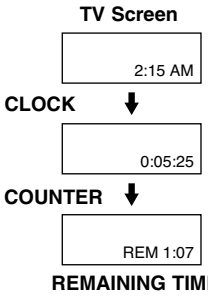


Easy Information Screen (Station ID)



Easy Information Screen (Program details)

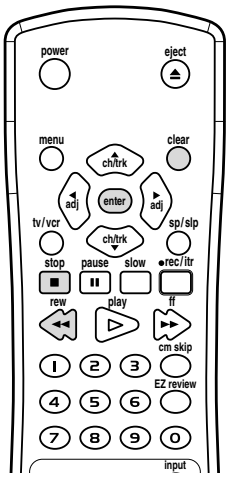
TAPE COUNTER MEMORY FEATURE



REAL-TIME COUNTER

Shows length of tape run in hours, minutes, and seconds (refer to the left). Press **ENTER** to select the real-time counter display. Each additional press of **ENTER** changes the counter display as shown left.

- Counter changes to **0:00:00** when a cassette is ejected.
- The real-time counter does not operate if nothing is recorded on the tape.
- The real-time counter only works if a tape is in the VCR.



COUNTER MEMORY FUNCTION

This is useful if there is a section of tape you want to view immediately after recording or if you want to return to the same point several times.

1. Begin recording or playing a tape.

2. Press **ENTER** repeatedly to display the real-time counter on the TV screen.

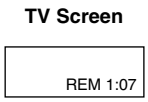
3. At the point you want to locate later, reset the real-time counter to **0:00:00** by pressing **CLEAR**.

4. Continue to play or record.

5. Press **STOP** when recording or playback finishes.

6. Press **REW**.

The tape automatically stops when the tape counter returns to about “0:00:00”.



TAPE REMAINING

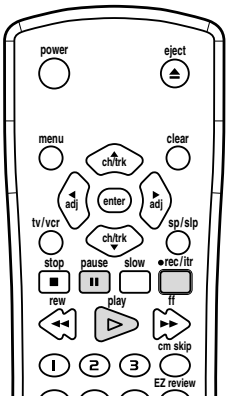
This function allows the time of the remaining tape to be displayed during recording or playback.

Press **ENTER** repeatedly until the REM indicator appears during recording or playback.

NOTE

The remaining tape length indicator may not be displayed correctly depending on the condition and type of tape (T-120, T-140, or T-160 etc.).

EDITING A RECORDING



1. Press **PLAY** and watch the program until you reach the exact point where you want the new recording to start.

2. Press **PAUSE**.

3. Press **REC/ITR** once.

The program material to be recorded will appear on the television.

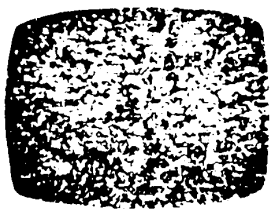
4. When you wish to start recording, press **PAUSE** again.

The new program material will directly follow the previously recorded material. This feature is especially helpful during camcorder-to-VCR dubbing use so each segment of the recording becomes a continuous program.

OPERATING HINTS

- In manual recording, Timer recording, Instant Timer Recording, playback, or fast forward modes, the VCR automatically starts rewinding the tape when the end of the tape is reached. The cassette will rewind and stop at the beginning of the tape, be ejected, and the VCR will turn itself off.
- After you have finished using the VCR, rewind, eject, and remove the cassette. Place the cassette in its protective sleeve to protect it from dust. It is not necessary to rewind the cassette before removing it, but if you do, it will be ready to play or record the next time you use it.
- Be sure the VCR Channel Selector is on the correct channel you wish to record. The channel that is being recorded can always be checked by tuning the television to the VCR channel (3 or 4) and pressing the **TV/VCR** selector to turn the VCR's VCR indicator on.
- Do not attempt to hook up more than one television set to the VCR for either recording or playback.

VIDEO HEAD CLEANING



- Whenever a video cassette is inserted into or ejected from this unit the video head is automatically cleaned.
- However, it is possible that the heads may become clogged when playing an old or damaged tape. If the image on your screen resembles the picture on the left while playing back a tape, the heads may require cleaning.
- To clean the heads, obtain a head cleaning tape from your local video dealer. Follows the instructions that come with the cleaning tape, as excessive use can shorten head life.

TROUBLESHOOTING

SYMPTOM	CHECKPOINT & POSSIBLE SOLUTION
Cassette cannot be inserted.	• Load cassette in direction indicated by arrow on cassette. • A cassette is already in the VCR. • Check if the VCR indicator panel is lit. If not, make sure power cord is plugged in. • If the CST.IN indicator flashes, press **POWER** again.
No picture appears on TV screen.	• Use **TV/VCR** to select the VCR mode. • Tune the television to the same channel selected on the VCR output channel select switch. (CH3 or CH4).
A picture appears on TV screen but is not clear.	• Adjust the Tuning Control on the television to obtain the best picture.
The VCR will not go into the recording mode, even when **REC/ITR** is pressed.	• The cassette has had the safety tab removed. Paste a piece of cellophane tape over the safety tab hole or use a different cassette.
No picture appears on television screen when **PLAY** is pressed.	• Tune the television to the VCR channel (3 or 4) depending on the selected channel on the back of the VCR. (Output Channel). • Try a different cassette tape.
No picture, but audio is clear.	• The heads may require cleaning. • Take VCR to a qualified Service Center for service.
Interference on playback picture.	• Adjust fine tuning knob on television set to obtain best picture. • Adjust the tracking control. • Take VCR to Service Center for service.
Remote does not work.	• Weak or dead batteries. • Remote IR signal to sensor on VCR being blocked.
"--:-- --" appears on the TV Screen.	• Reset time according to instructions. Power has been interrupted.
VCR does not start at preset record starting time.	• Set up recording time according to instructions. • Be sure the AM-PM setting on display is correct. • VCR must be turned off for Timer to work.
The tape is ejected in the timer mode.	• The cassette has had the safety tab removed. Stick a piece of cellophane tape over the safety tab hole or select a different cassette.
CST.IN indicator flashes.	• Insert a cassette.
The Auto Clock Setup procedure enters the wrong date and/or time.	• The TV station sent the wrong XDS information. Use the Manual Clock Set procedure on page 20.

SPECIFICATIONS

GENERAL

Head System		Four head helical scan azimuth system
Power Source		AC 120V, 60Hz
Power Consumption		Approx. 12 Watts
Dimensions	(WxHxD)	360 x 94.5 x 230 mm (14.3” x 3.8” x 9.2”)
Operating Temperature		5 °C - 35 °C (41 °F - 95 °F)
Operating Humidity		Less than 80% RH
Timer		12-hour display type with AM, PM
Weight		Approx. 3.2 kg (7 lbs)
Tape Speed	(SP)	33.35 mm/sec
	(LP)	16.67 mm/sec
	(SLP)	11.12 mm/sec
Tape Width		12.7 mm
Maximum Recording Time	(SP)	2 HOURS (T-120)
	(SLP)	6 HOURS (T-120)
		8 HOURS (T-160)
Rewind Time		about 3 minutes (T-120)

TUNER

Antenna	(UHF)	75 ohms
	(VHF)	75 ohms
VHF Output Signal		Channel 3 or 4 (Switchable)
Channel Coverage	(VHF)	2-13
	(UHF)	14-69
	(CATV)	1-125 (4A, A-W, W+1 - W+84, A-5 - A-1)

VIDEO

Video Signal System	EIA Standard (525 lines, 60 fields)
	NTSC type color signal
Input	1.0 Vp-p 75 ohms unbalanced
Output	1.0 Vp-p 75 ohms unbalanced
Signal to Noise Ratio	More than 43 dB (SP mode)

AUDIO

Input	(LINE)	-6.0 dBm more than 47 kohms
Output	(LINE)	-6.0 dBm less than 1.0 kohms
S/N Ratio		More than 43 dB (SP mode)
Frequency Range		200 Hz to 10kHz (SP mode)

* Design and specifications are subject to change without prior notice.
* Weight and dimensions shown are approximate.

ZENITH ELECTRONICS CORPORATION
VCR LIMITED WARRANTY-USA

Zenith will repair or replace your product, at Zenith's option, if it proves to be defective in material or workmanship under normal use, during the warranty period ("Warranty Period") listed below, effective from the date ("Date of Purchase") of original consumer purchase of the product. This warranty is good only to the original purchaser of the product and effective only when used in the United States, excluding U.S. Territories.

WARRANTY PERIOD:	**HOW SERVICE IS HANDLED:**
LABOR: 90 DAYS from the Date of Purchase. **PARTS: ONE YEAR** from the Date of Purchase. **Repaired or Replacement Units** are warranted for the remaining period of the original warranty.	**Call 1-800-984-9349 for instruction**s on getting the defective unit repaired or replaced. **Please retain dated sales receipt and your box** to return the unit to Zenith for repair or replacement. Both ways shipping charges will be borne by Zenith during the Warranty Period. After the Warranty Period, you pay in-bound shipping charges and Zenith pays return shipping charges.

THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT ANY IMPLIED WARRANTY IS REQUIRED BY LAW, IT IS LIMITED IN DURATION TO THE EXPRESS WARRANTY PERIOD ABOVE. ZENITH WILL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INDIRECT, OR INCIDENTAL DAMAGES OF ANY KIND, INCLUDING LOST REVENUES OR PROFITS, IN CONNECTION WITH THE PRODUCT. SOME STATES DO NOT ALLOW LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

THIS LIMITED WARRANTY DOES NOT APPLY TO:

1. Damages or operating problems that result from shipping, installation, adjustment of user controls, calibration, maintenance or failure to maintain, or separate system components; and
2. Damages or operating problems that result from normal wear and tear, misuse, abuse, operation outside environmental specifications or contrary to the requirements or precautions in the Operating Guide, accident, lightning strikes or other natural causes, unauthorized modification or alteration, incorrect electrical current or voltage, software errors that do not disable functionality, operating software protocols adopted after the date of manufacture or for outside the U.S., institutional or commercial use, or other causes not arising out of defect in material or workmanship.
3. **Therefore, the cost of repair or replacement of such a defective product shall be borne by the consumer.**

CUSTOMER INTER-ACTIVE CENTER NUMBERS:

For Warranty Service	**Call 1-800-984-9349** (Monday ~ Friday, 7 AM ~ 7 PM CT) Retain your dated sales receipt to prove the Date of Purchase as well as your box for shipping the unit to Zenith, for warranty service. Legible copy of your sales receipt must be submitted with the unit at the time the unit is returned for warranty service.
For Post Warranty Repair	For repair or replacement after the Warranty Period has expired, **Call 1-800-984-9349** (Monday ~ Friday, 7 AM ~ 7 PM CT)
For Where-to buy, Product Assistance, or Customer Assistance	**Call 1-877-9 Zenith (1-877-993-6484)** (Monday ~ Friday, 7 AM ~ 8 PM CT and Saturday, 8 AM ~ 5 PM CT) and select an appropriate option from the menu. Or visit our website at **http://www.zenithservice.com**

FOR WARRANTY SERVICE:

You must call **1-800-984-9349** (Monday ~ Friday, 7 AM to 8 PM CT) and select appropriate option from the menu to confirm the product is defective and to obtain Return Authorization (RA). During the Warranty Period, Zenith will send you a return-shipping label. After you obtain RA for return, please box your unit with a copy of the sales receipt and enough packing material to ensure undamaged delivery of your product. When you receive the label, place it on the box and call the 800 # in the instruction for pick-up. When your unit is received, Zenith will repair or replace your unit in accordance with this Limited Warranty.

ADVANCE SHIPMENT. If replacement unit is available and you want second day delivery, our service representative will ask for your credit card number. Zenith requires a reserved deposit by credit card as surety for such advance shipment. Your credit card will not be charged if you return the defective unit in 10 business days. For advance shipment, the return label will come with the replacement unit sent to you. Please follow boxing and shipping instructions above.

ZENITH ELECTRONICS CORPORATION
2000 MILLBROOK DRIVE
LINCOLNSHIRE, IL 60069

Zenith Part No. 206-3869
GS# 3834RM0057X
Printed in Indonesia
Issue O